



Empower the Workforce with BYOD and Collaboration

Cloud-Based Unified Communications Enhances BYOD Strategies

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ZK Research
A Division of Kerravala Consulting

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Introduction: An IT Perfect Storm Is on the Horizon

A perfect storm is the merging of several forces to create a single, unstoppable force. Today, in corporate IT, a number of forces are rapidly converging to create the biggest transition since the birth of the mainframe: the shift to consumerized IT (Exhibit 1). This is similar to the shift that occurred in the late 1990s when the Internet exploded: Low-cost PCs, home broadband, the development of the browser and Windows came together and created a perfect storm that transformed computing forever.

Exhibit 1: The IT Perfect Storm



Source: ZK Research, 2014

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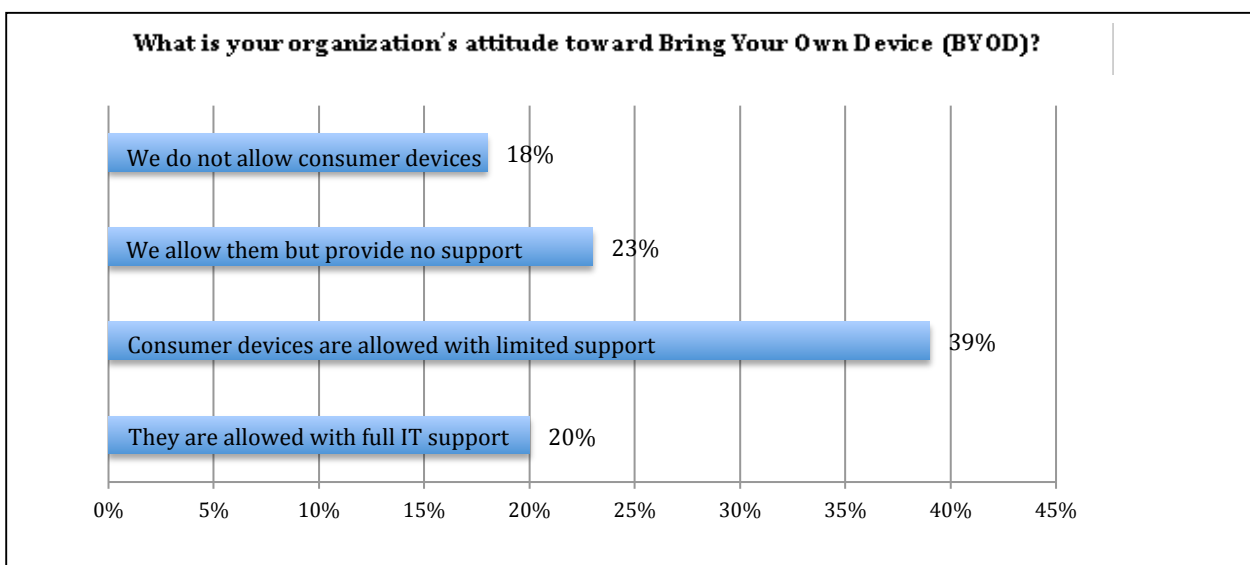
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The shift to consumerized IT will finally enable IT to fulfill its vision of delivering any application or service to any worker using any device over any network. This transition will untether the worker from the confines of the office and bring productivity to unprecedented levels—all at a cost lower than traditional IT. The perfect storm will be enabled by the following forces:

- **Cloud-delivered applications:** Cloud computing makes applications location-independent, giving workers a consistent user experience wherever they have access.
- **Device evolution:** Devices have gone through tremendous evolutionary steps in the past five years. Today's mobile devices have high-quality, multimedia interfaces that enable workers to perform any task when out of the office. These new devices have the power to transform the way people work, but only if they have access to corporate tools and applications.
- **Wireless advancements:** Historically, workers had to choose between the convenience of wireless and the performance of wired. However, the commercial availability of 4G cellular services and the ratification of 802.11n Wi-Fi lowered this barrier. Although Wi-Fi is still a shared medium, the technology has advanced enough to give a similar experience to wired if the network is designed correctly.
- **Mobile computing:** Applications are now being developed with features that are uniquely mobile. These applications take advantage of features such as location information, accelerometers that provide speed and directional information, and other features that create new functionality.
- **Bring Your Own Device (BYOD):** After years of fighting the BYOD force, IT has finally embraced BYOD as a mainstream corporate initiative. In fact, the majority of organizations support BYOD today. Exhibit 2 shows that more than 80% of CIOs embrace the concepts of BYOD. The pressure on IT to implement BYOD is coming from workers and corporate executives who are putting it on the short list of CIO priorities.
- **Unified communications (UC):** Competitive advantage is based on the speed of decision making—therefore, improving collaboration is a key initiative for companies. This becomes much more difficult when the workforce is highly mobile and diverse. Improving collaboration requires more than process change and necessitates better tools for workers to use. For this reason, UC has become critical for organizations to improve the collaborative process and remove much of the human latency that plagues the collaborative process today.

Exhibit 2: CIOs Are Embracing BYOD



Source: ZK Research, 2014

Section II: BYOD Is Now Mainstream

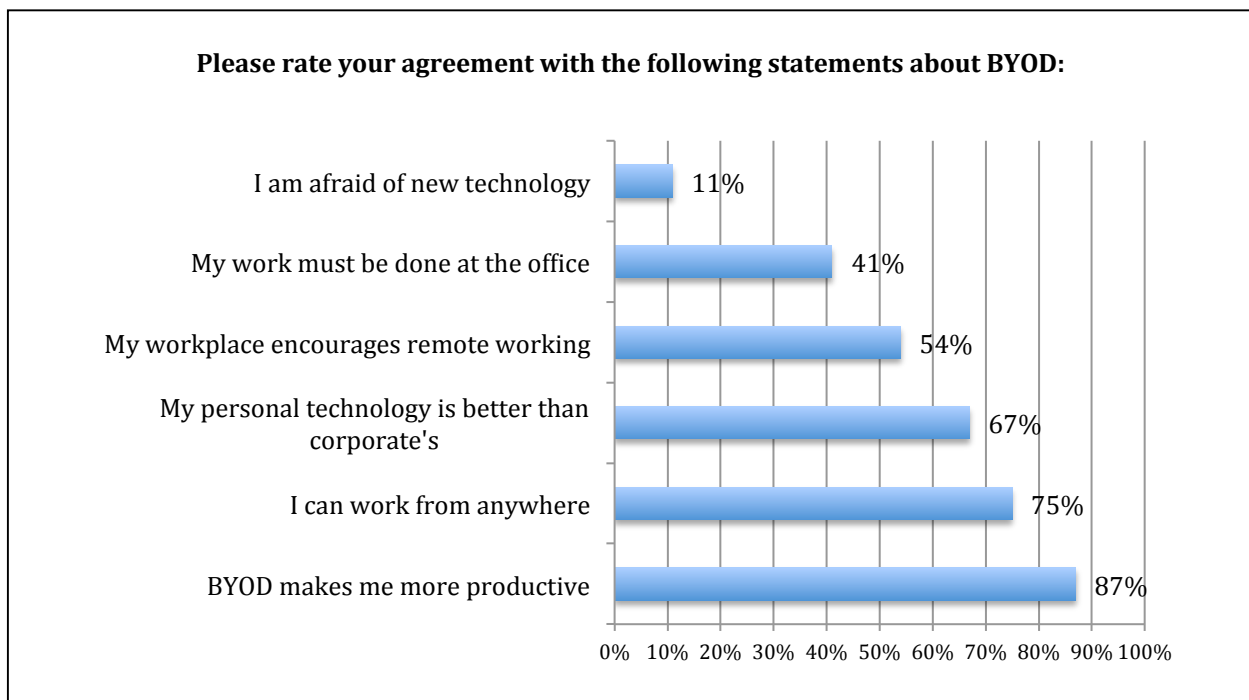
About a decade ago, nearly all corporate technology was procured, provisioned and managed by the IT department. During this period, the technology used in the workplace was far superior to anything found in a worker's home. Therefore, it was natural for users to rely on the corporate IT department to provide the best technology to help workers do their jobs effectively.

However, as consumer technology companies have increased the pace of innovation and consumers have become more technologically savvy, the perception that workplace technology is superior to

consumer devices has faded. Because of this, the pressure to have a BYOD program is coming from end users, corporate executives and a growing millennial workforce, and IT is being forced to implement a policy.

Consumer technologies are alive and rampant in the workplace. Exhibit 3 shows data from a recent ZK Research survey in which workers were asked about the use of consumer technology in the workplace. The results show just how much consumer devices are in demand by workers. Workers believe that a BYOD policy makes them more productive, making it a top priority for IT leaders.

Exhibit 3: BYOD Makes Workers More Productive



Source: ZK Research 2013 BYOD Survey, n=612

However, to maximize productivity, IT leaders need to focus on more than just on-boarding devices and delivering basic applications when developing BYOD initiatives. Competitive advantage is based on an organization's ability to quickly make the best decision with the right people, no matter where they are located. Consumer devices have rich media capabilities that are better than those of most corporate desktops, and therefore they make ideal collaboration tools.

For the most part, the BYOD challenge related to on-boarding devices has been solved. IT leaders should now focus on delivering a rich set of UC tools such as corporate voice, video and presence to mobile workers.

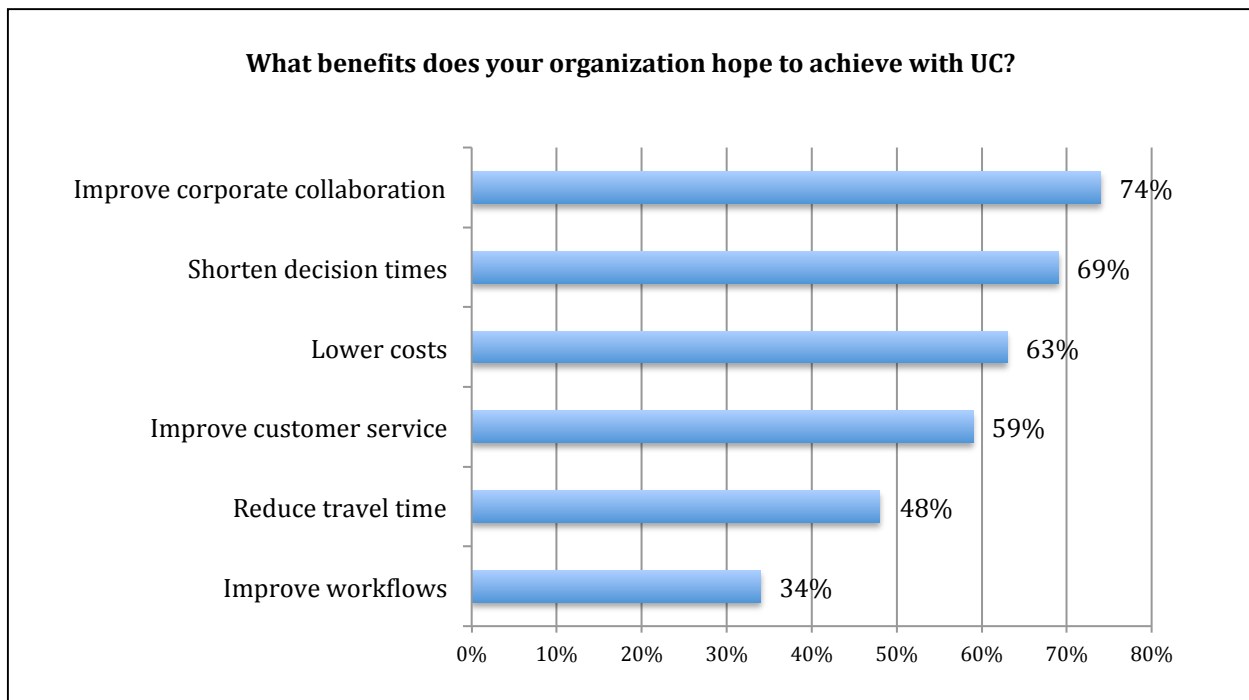
Traditional premises-based UC solutions have been optimized for desktop-based UC. To enable a rich, collaborative experience on consumer mobile devices, IT leaders should utilize a cloud-delivered UC solution.

Section III: Cloud-Based Unified Communications Enhances BYOD

Unified communications is an initiative that is at or near the top of every IT leader's priority list because it enables better collaboration, which ultimately leads to innovation.

Historically, UC was used to cut the cost of traditional communications. And although the cost savings associated with UC are significant, improving corporate collaboration has become the top driver for UC deployments (Exhibit 4).

Exhibit 4: IT Leaders Look to Improve Collaboration with UC



Source: ZK Research 2013 UC Purchase Study, n=382

To date, UC has done a great job of improving desktop-based collaboration. However, it should also enable workers to collaborate no matter what device the user may have, and be location independent.

Generally, mobile workers have been limited to joining virtual meetings through an audio bridge only, which puts them at a significant disadvantage to workers who are physically present with desktop collaboration tools. In addition to audio capabilities, mobile workers need access to the following UC tools:

- **Corporate dial plans:** These plans allow workers to locate and call other employees while providing an experience that's consistent with what they have when using a company phone.
- **Unified messaging:** This feature delivers voice mails and faxes to a user's e-mail inbox. Because

of this, users no longer need to constantly call a centralized phone number and check their voice mails because they will be delivered like any other message.

- **Web conferencing:** Collaboration requires more than just being able to interact with other individuals. Web conferencing allows workers to share rich data such as documents, spreadsheets and presentations. Having access to web conferencing tools over mobile devices gives everyone involved in the meeting the same data.
- **Presence information:** The use of presence enables workers to identify whether other workers are available. Although this is important when in the office, it's critical when workers are mobile because it can significantly shorten the time it takes for a user to find an expert who can then solve a problem or answer a question.

- **Mobile video:** The use of video has been rising for the past few years. Video allows individuals to interpret body language and retain more information than with audio only. ZK Research studies indicate that workers retain 38% more information in meetings that use video versus voice only. As the workforce becomes more mobile, video will become a critical component of collaboration.

Delivering this broad of a feature set to desktops with a premises-based solution can be challenging but is manageable with current technology.

However, mobile workers require UC functions to be delivered to a wide variety of devices with various screen sizes and multiple operating systems. Premises-based solutions were not built for such a deployment model and can often require custom software or manual processes to connect consumer devices to corporate UC systems.

However, cloud-based applications are built on the concept of centralized deployment, making them the optimal way of delivering services to any worker, in any location, using any type of device: laptop, desktop, tablet or mobile phone. Workers want a choice of device and the ability to shift between them on the fly. Because cloud-based UC stores the majority of the data and personalization information on the network and not the device, it can support this type of dynamic UC environment.

Additionally, cloud-based UC offers the ultimate in deployment flexibility. Instead of having to deliver all services to a subset of users, as with premises-based solutions, cloud-based UC solutions are network independent and can reach any worker, anywhere. This means deployment strategies can be based on worker need instead of the physical location of the UC servers.

In addition to the above benefits, cloud-based UC can enhance a BYOD strategy in the following ways:

- **Centralized administrative functions:** One of the most difficult challenges in managing premises-based UC solutions is scaling management functions. Managing users' devices has always been a challenge for IT departments, but BYOD can double or even triple the number of devices IT needs to manage. With a cloud solution, all administrative and management tasks are centralized so the administrator can perform a task once and be confident that the changes are made company wide. Also, because cloud-based UC is delivered through a web browser, the frequency of updates should be minimized.

- **Rapid deployment and faster time to market:** The consumer device market is highly competitive, which drives rapid innovation. Taking advantage of these benefits can be a long, arduous process with premises-based solutions because companies must develop software multiple times for the various devices and operating systems. With cloud UC, a new feature or application can be made available to the company as soon as the cloud provider makes it available. The company can be as aggressive or conservative as the business requires.
- **Improves security:** Although securing the enterprise has always been a challenge, BYOD brings a number of new challenges. Solutions are difficult to scale if done on an individual device basis. The speed at which new devices are coming into the workplace and the rate of change make it impossible for IT to continually ensure devices have the latest software to protect the data and the company. A cloud solution is inherently more secure because there is very little data stored on the device and the cloud provider secures the content. This means device-level security needs to focus only on on-boarding and network-related issues rather than securing content, making cloud solutions more structurally secure than premises-based solutions that rely heavily on localized content.
- **Requires less "user integration":** With traditional solutions, the user is often required to move data manually or synchronize information. For example, if a worker misses a call at his or her desk, the worker will be unaware of it when mobile. With a cloud solution, all of the content and application integration is done in the network so no user-based integration is needed. In the above example, the missed call at the user's desk would show up in the missed call log of his or her mobile phone.

BYOD is currently a top initiative for almost every organization. The cloud creates device and operating diversity, and IT leaders need solutions that can deliver consistent functionality to any worker on any device no matter where the worker is located. Cloud-based UC enables workers to have a rich UC experience when in the office and on the road, and on corporate endpoints or personal devices, and it can augment any current premises-based solution. Alternatively, cloud UC can be a complete solution for companies that have not started down the path of UC yet.

Section IV: What to Look for in a Solution Provider

Enabling workers to use personal devices is no longer optional because it has a direct impact on worker productivity. As organizations look to leverage consumer devices, mobile UC delivered from a cloud provider will also become a key initiative. When it comes to choosing a hosted UC solution provider, there are many choices, but not all providers are created equal. The following are top focal points for choosing a cloud-based UC provider:

- Multi-OS support:** With desktop computing, there is currently a single *de facto* standard when it comes to operating system. The complete opposite is true with mobile computing. Also, because workers are bringing their own devices, IT can't standardize on a single operating system without limiting choice. Choose a solution provider that supports all of the major operating systems to maximize value.
- Network-based mobile integration:** When it comes to delivering mobile UC, there are multiple approaches a service provider can take. The most scalable and simplest method for an enterprise deployment is to have the services provisioned from the network. With BYOD, the IT department is less able to manage the endpoint directly, making managing client software difficult, if not impossible. Also, endpoint-based solutions use almost twice as many trunk lines as network-based solutions, which can dramatically reduce the cost savings associated with UC.
- Simplified pricing models and bundles:** From a services perspective, UC is very broad. This means there are many different ways to price and sell UC services. The numerous options can create complicated pricing models and confusion among buyers trying to determine what would best fit their business. Organizations that are considering a cloud UC provider should look for solutions that include telephony, softphones and mobile integration.
- SIP trunking integration:** One big benefit of a cloud UC solution is the ability to leverage SIP trunking services. SIP trunking can provide better service quality, enable B2B services and significantly reduce trunking costs. Many service providers offer cloud UC, SIP trunking and network services as discrete elements and leave it up to the customer to integrate them. The service provider should offer a service that includes all of the above in a pretested and integrated solution.
- Support for leading platform vendors:** There are many ways to build a cloud-based UC solution. Choose a service provider that supports the leading UC platforms, specifically Microsoft and Cisco, to ensure you have leading features and functions, and to ensure interoperability with premises-based solutions. This includes offering hosted Cisco CallManager, Cisco HCS and hosted Microsoft Lync solutions.
- Microsoft Active Directory integration:** Managing user information can be an arduous process for midsize to large companies. Find a solution that leverages Microsoft Active Directory because that will alleviate the need to manage a concurrent directory specifically for UC functions.
- Intuitive mobile interface:** No matter how good the back-end infrastructure is, a cloud UC deployment is likely to fail if the user interface is complicated. Pay particular attention to the ease of use and intuitiveness of the mobile user interface because that will determine whether workers will use the solution or find other means of collaborating.
- Best-in-class IP/MPLS network solution:** The quality of real-time collaborative applications is highly dependent on the underlying network that supports it. An end-to-end IP/MPLS network means the voice and video sessions will maintain state and can be dynamically moved if necessary. Additionally, optimization features such as quality of service (QoS) and class of service (CoS) can be applied as needed.

CoS and QoS are very important to the quality of real-time applications. Any degradation in quality will negatively impact the user experience, and an IP/MPLS service is ideally suited for these types of real-time applications.

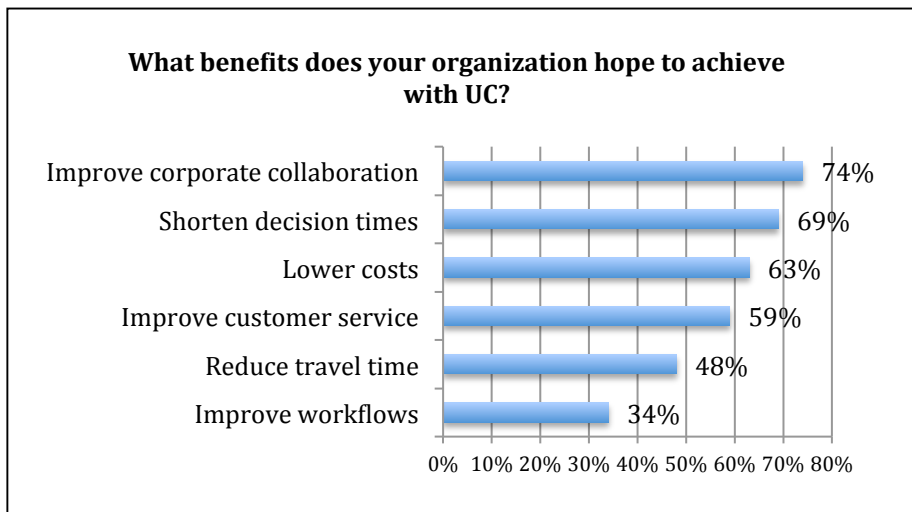
A robust, end-to-end IP/MPLS network foundation will deliver communication and collaboration services that are inherently more reliable and higher quality than services deployed on a legacy, circuit-switched network. The underlying network is one of the most important components of UC. IT decision-makers should use a network that was built for the era of IP communications instead of a legacy or patched network.

Over the past year, ZK Research has analyzed many cloud-based UC solutions including large Tier 1 incumbent network operators, cloud UC pure-plays and other regional providers. Based on the criteria in Exhibit 5, ZK Research identifies Sprint as a network operator that should be considered when organizations are evaluating hosted UC vendors.

Vendor Spotlight: Sprint

ZK Research has reviewed Sprint's cloud-based UC solution, which was launched in early 2012. Exhibit 5 evaluates the solution against best practice criteria.

Exhibit 5: Benefits are Multi-Dimensional



Source: ZK Research 2013 UC Purchase Study, n=382

Vendor Criteria	Sprint Complete Collaboration SM	Solution Description
Multi-OS support	✓	Support for all major mobile operating systems including iOS and Android
Network-based mobile integration	✓	Seamless integration; no third-party client
Simplified pricing models and bundles	✓	Flexible packages for all user types (common areas, corporate workers, telecommuters, road warriors, etc) with per-seat charges offering predictable operating expenses
SIP trunking integration	✓	SIP trunks integrated with network services
Support for leading platform vendors	✓	Support for both Microsoft and Cisco platforms
Microsoft Active Directory integration	✓	User database integrated with AD for ease of deployment and management
Intuitive mobile interface	✓	Users stay connected to colleagues through instant messaging with rich presence

		information, can join Lync Meetings with a single touch, and initiate and receive voice and video calls.
Best-in-class IP/MPLS network	✓	High-quality, robust network on IP backbone

Section V: Conclusion and Recommendations

The era of BYOD is here. IT leaders should not only support it but also embrace the new world of work by enabling workers to perform any function in any location on any device. This includes corporate applications as well as rich UC applications to enhance worker collaboration from anywhere.

Delivering UC to mobile workers can be a challenge using premises-based solutions. To close the gap between BYOD and UC, IT leaders should seek out a robust, cloud-based UC solution to make collaboration a core part of the company's BYOD strategy. To help IT leaders with this process, ZK Research recommends the following:

- **Be aggressive with BYOD.** If your organization hasn't started the process yet, be a leader and bring it into your company. The pressure will continue to mount from business leaders and other workers. Workers believe that BYOD will make them more productive. It is the role of IT to give workers the technology to maximize productivity without putting the company at risk. The lack of a BYOD program means users will work around corporate policy, which creates higher levels of risk for the organization.
- **Consider UC to be a core component of BYOD.** BYOD means more than on-boarding or accessing e-mail when on the road. Workers should have the ability to engage in rich, collaborative sessions using the unique capabilities of tablets and smartphones. Cloud UC can deliver a consistent set of rich features, securely, to workers no matter what device they are using or where they are located. Cloud UC can deliver on the vision of mobile UC and enable true mobile collaboration.
- **Leverage the power of the cloud.** Cloud and mobility should go hand in hand. Cloud is a network-centric compute model and can deliver any service or application to any worker on any device. Take advantage of the ubiquitous delivery capabilities of the cloud for UC and other

applications to support the company's BYOD initiative.

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